

**APPLICATION FOR A STATE DESIGNATED, FEDERALLY  
APPROVED NO DISCHARGE AREA FOR  
CASCO BAY**



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## INTRODUCTION

The Maine Department of Environmental Protection (ME DEP), is requesting that the United States Environmental Protection Agency (USEPA) allow the State's designate of Casco Bay as a No Discharge Area (NDA) pursuant to the Clean Water Act, Section 312(f)(3). Figure 1 details the geographic extent of the proposed NDA. An NDA is a body of water in which the discharge of vessel sewage, whether treated or not, is prohibited.

The point sources of pollution to Casco Bay are well regulated by the Clean Water Act and the State's water quality laws, as well as regulations through the Coast Guard, the ME DEP, and the United State Environmental Protection Agency (USEPA). Maine has begun to address stormwater contamination with an aggressive combined sewer overflow abatement plan, the enactment of the Stormwater Management Law in 1998, and assumption of the federal stormwater program in 2001 and 2005. The ME DEP continues to identify and eliminate failing or illegal domestic waste water systems that discharge to the water, working closely with local municipal officials and the Department of Marine Resources (DMR). State environmental laws such as the Mandatory Shoreland Zoning Act and the Natural Resources Protection Act are designed to control the development of sensitive coastal areas and to limit the amount of non-point source pollution. The state's Small Communities Grant Program (SCGP) funds the repair or replacement of many failing or illegal septic systems every year. Since its beginning in 1982, the SCGP has repaired or replaced approximately 3,500 septic systems throughout the state. The Overboard Discharge Grant Program (ODGP) is designed to eliminate approved discharges to targeted shellfish areas so those areas may be opened for harvesting. Since 1991, the ODGP has removed over 170 overboard discharge systems and facilitated the opening of 4,500 acres of shellfish harvesting areas.

The cities and towns surrounding Casco Bay, including Cape Elizabeth, South Portland, Portland, Long Island, Falmouth, Cumberland, Yarmouth, Freeport, Brunswick and Harpswell and Phippsburg have made recent improvements to address land based sources of pollution contributing to the closure of shellfish beds, loss of eelgrass habitat, the closure of bathing beaches, and overall poor water quality. The ME DEP in conjunction with municipalities, the Casco Bay Estuary Project, the Friends of Casco Bay and other interest groups have been working hard to reduce pollution going into Casco Bay and improve the water quality. Stormwater management improvements in the cities of Portland and South Portland have reduced the amount of combined sewer overflows in the Bay. Revisions to Maine's Stormwater laws comprehensively address stormwater issues from development. The non-point source management program works through many venues, from flower shows to educate homeowners to contractor training, to educate people on the sources, impacts, and prevention measures for non-point source pollution. In the past 10 years over 37,940 acres of shellfish harvesting area have been opened statewide due to the elimination of landside overboard discharges and malfunctioning septic systems.

However, even with all these efforts, significant water quality issues remain including very low dissolved oxygen values in some locations and continued bacterial contamination. Sewage

discharged from boats contributes to poor water quality, especially in poorly flushed embayments. Between 1970 and 2004, the number of registered boats on the Maine coast more than quadrupled to 75,000. Of the registered boats in coastal waters, it is estimated that approximately 7,000 use marine sanitation devices (MSDs) of some kind. These numbers do not include the significant transient boat traffic estimated to be nearly 8,000 boats per year, almost all of which are cruising boats equipped with MSDs. The percentage of those nearly 15,000 boats that are equipped with holding tanks (MSDIIs) is unknown but is estimated to be nearly 50% (7,500).

Vessel sewage, like many other pollutants, can be harmful to the environment when it is not adequately treated. Sewage contains a high concentration of nitrogen, a substance that can lead to algal blooms and low dissolved oxygen concentrations that can affect the health of fish, shellfish, and eelgrass beds. Sewage also contains bacteria and viruses that can make shellfish unsuitable for human consumption and make our beaches unsafe for swimming.

Every boat with an installed marine head (toilet) must have a US Coast Guard approved Marine Sanitation Device (MSD). The US Coast Guard tests and certifies MSDs as Type I, Type II, or Type III. A Type I MSD means a device that, under the test conditions, produces an effluent having a fecal coliform bacteria count not greater than 1,000 per 100 milliliters and no visible floating solids. A Type II MSD means a device that, under the test conditions produces an effluent having a fecal coliform bacteria count not greater than 200 per 100 milliliters and suspended solids not greater than 150 milligrams per liter. Type III MSDs are holding tanks designed to prevent the overboard discharge of any sewage, treated or untreated; although, some Type III MSDs are equipped with a “y” valve that allows the operator to legally discharge stored sewage once the vessel is more than 3 miles offshore. Boats larger than 65 feet in length must use a Type II or Type III MSD, while boats under 65 feet can use a Type I, II or III MSD.

While Type I and Type II MSDs are designed to treat vessel sewage, they do not remove significant amounts of nitrogen from the waste before it is discharged. They also cannot remove all of the bacteria or viruses. Certain waters of high public and environmental value that require greater environmental protection than under existing laws, can be designated NDAs under the federal Clean Water Act. Because there is a risk that sewage may negatively impact these sensitive areas, all vessel sewage, even if treated by a Type I or Type II MSD, is prohibited from being discharged in NDAs.

As a result, the MEDEP feels it is appropriate to request designation of Casco Bay as a No Discharge Area. The area of the Bay to be included in the designation includes all contiguous waters north and east of 43° 33' 56.04" N 70° 11' 48.22" W at Cape Elizabeth Light in Cape Elizabeth, to a point 43° 42' 17.65" N 69° 51' 17.70" W at Bald Point in Phippsburg. This southern boundary was chosen based on a straight line between the point and thus an easy line-of-sight determination but does not include any waters outside of the territorial seas (3 mile limit). The proposed NDA extends up the Fore, Presumpscot, Royal, cousins, Harraseeket, and New Meadows Rivers to the extent of navigation. See Figure 1 in Appendix A.

## CERTIFICATION OF NEED

In 1990, Casco Bay was designated one of 28 "estuaries of national significance" (out of 130 in the nation) and included in the U.S. Environmental Protection Agency's National Estuary Program, established in 1987 to protect nationally significant estuaries threatened by pollution, development or overuse.

Casco Bay constitutes over 229 square miles of marine habitat including over 197,000 acres of shellfish harvesting areas. The intertidal zone includes a diverse array of habitats from rocky shore to salt marshes and flats. Due to topography and wide tidal variations characteristic of the Gulf of Maine, intertidal areas in Maine are the most extensive along the Atlantic Coast of the United States. Flats are the most characteristic intertidal habitat in Casco Bay, with 11,582 acres of tidal flats.

From an economic standpoint, the shellfish harvesting areas are an important and valuable resource. Using average soft shell clam prices for 2004 as an example, the annual potential income from the tidal flats in Casco Bay alone is over \$2.9 million<sup>1</sup>. In addition, the flats support commercial harvests of sandworms and bloodworms. Offshore harvesting areas include scallop and surf clam habitat and increasing amounts of aquaculture in the form of mussel rafts. However, approximately 10% of the total resource is closed to shellfish harvesting due to actual or threatened bacterial contamination. See Figure 2 in Appendix A.

Flats are also particularly important environments because they support a rich and abundant animal community. Shorebirds, waterfowl, and wading birds feed on flats and in the creeks and shallow subtidal areas near flats and the open waters. Approximately 150 species of waterbirds inhabit Casco Bay, 100 of which occur regularly, the total of number ranging seasonally from approximately 4,600 to about 32,000. Cape Elizabeth in Casco Bay is the boundary for two zoogeographic regions - the boreal and northern temperate zones - for waterbirds. Consequently, a wide variety and unusual aggregation of marine birds occur in Casco Bay. Figure 3A in Appendix A details the shorebird and eagle habitat and colonies.

The 500 acres of rocky shore in Casco Bay provide habitat for a wide range of species, from seaweeds, periwinkles, mussels, barnacles, and crabs to starfish and seals. Waterfowl such as eider ducks use rocky shore habitat for feeding. The composition of the sea bottom (i.e., fine mud, sand, gravel, cobble, boulders, and rock) determines which plants and animals live in particular subtidal habitats. For example, lobsters, crabs, and sea urchins generally live on hard bottom, whereas scallops and worms dwell in soft-bottom areas. Thirty-six species of finfish reside in Casco Bay. The most abundant year-round fish in the bay are bottom feeders such as pollock, sculpin, and skate. The shallow protected coves in Casco Bay provide perfect spawning habitat for fish that deposit eggs on the bottom (e.g., sculpin, winter flounder, rock gunnel, tomcod, and skate). There are numerous marine mammals in Casco Bay including two species of seals, four species of whales, two species of dolphins, and harbor porpoises.

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<sup>1</sup> This figure is calculated using \$250/acre/year as an average value. The average value was provided by the to ME DEP by DMR in and May, 2005 memo from Ronald Aho.

Plants, which support the food chain, are an important part of subtidal habitats. One particularly sensitive plant, eelgrass, is considered an indicator of ecosystem health. Growing in shallow, clear water with silty sand bottoms (and on some flats), it is used by flounder, cod, striped bass, scallops, crabs, lobsters, and waterfowl as a nursery area, feeding ground, or refuge from predators. Casco Bay has the largest and most dense concentrations of eelgrass mapped along the coast of Maine, with over 7,000 acres of beds. See Figure 3B in Appendix A.

### **Islands**

Casco Bay contains 758 islands, islets, and exposed ledges at mean high tide, a few of which are important habitat for colonial nesting seabirds. Uninhabited outer islands often provide prime nesting sites for seabirds, being inaccessible to predators such as fox, mink, and racoons. The bay has 50 seabird nesting islands, of which 17 support nationally significant populations of nesting birds. The 17 major nesting colonies collectively represent more than 15 percent of the states nesting seabird population. There are 41 documented seal haulouts in Casco Bay, on either small islands with no terrestrial vegetation or half-tide ledges that are under water at high tide. Figure 3A in Appendix A illustrates the location and density of the valuable habitat on Casco Bay's islands.

### **Water Quality**

In general, Casco Bay is a broad, shallow, bay which makes it incredibly productive, but also very sensitive. Due to it's shallow nature and isolated embayments, flushing of certain areas is limited. In addition, the watershed of the bay is highly developed resulting in significant levels of non-point source pollution. As a result, there are portions of the bay that have consistently very low dissolved oxygen levels. Low dissolved oxygen is an indicator of poor flushing and nutrient or solids pollution resulting in high biochemical oxygen demand. See Figure 4 on page 7..

The Maine Department of Marine Resources monitors over 400 stations in Casco Bay for bacteria as part of the National Shellfish Sanitation Program. Results from years of monitoring indicate that there are a number of bacteria "hot spots" that are seasonal in nature and in the location of significant harbors.

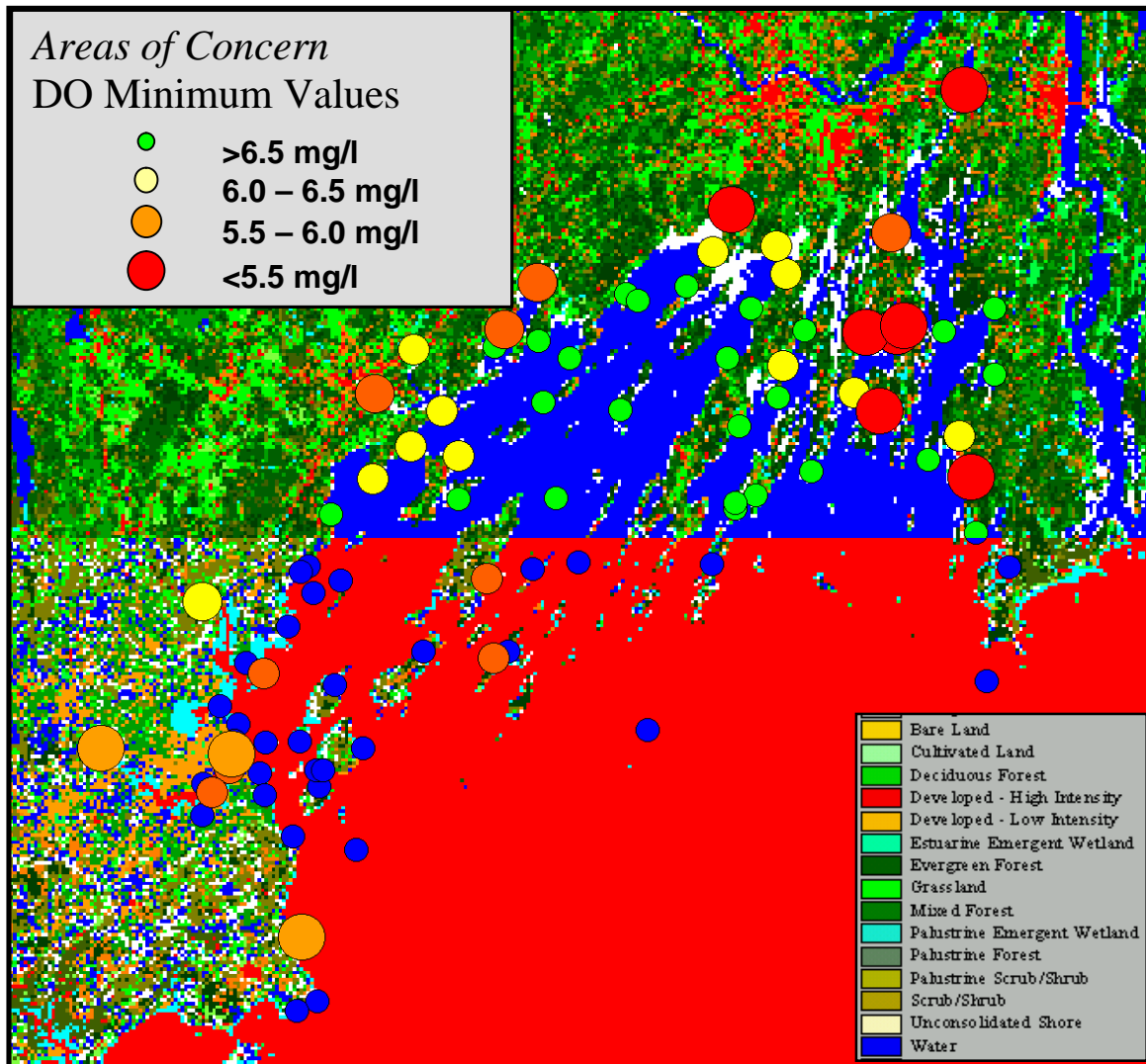
### **Recreational**

Casco Bay has the highest concentration of recreational and commercial boat activity on the coast of Maine. There are 19 large marinas in the bay directly servicing roughly 2,000 boats. In addition, the local authorities lease mooring space to residents that account for another 1,000 boats at a minimum. Due to the bay's abundant beauty and natural resources, it is one of the prime destinations for transient boaters. Although very difficult to quantify, the DEP estimates that the coast is visited by over 8,000 transient boaters a year, a unknown fraction of these will be visiting Casco Bay at any one time.

Casco Bay is also a "go to" destination for sea kayakers and divers due to its shallow depth good light penetration and the huge variety of flora and fauna. Because of its proximity to Maine's

largest city general tourist traffic from day trips, ferry cruises, fishing and whale watching excursions is high. There are over 20 charter and excursion companies operating over 30 boats in just the Portland area of the bay. There are numerous lighthouses including scenic Portland

Figure 4. Dissolved Oxygen Levels in Casco Bay based on minimum DO concentrations observed from 1993-1998 over entire 93-98 period (Figure courtesy of Friends of Casco Bay).



Head light, Spring Point light, historic forts including Fort McKinley, Fort Lyon, Fort Levett, Fort Preble, Fort Allen, Fort Williams and the beautiful Fort Gorges. Natural areas in places as distant as Back Cove and Basket Island, state parks such as Wolf's Neck, and Winslow and beaches abound. Finally, many of Casco Bays larger islands are home to year-round resident populations who use the coastline for swimming, shellfish harvesting (where allowed) walking and fishing. Figure 5 identifies a number of the official recreation areas in Casco Bay.

The Department has concluded that it is most efficient to submit one application for NDA designation be submitted covering all of Casco Bay. Maine DEP has identified twenty-two individual harbors located within Casco Bay that warrant protection through the NDA program and has concluded that treating the entire bay together will provide more efficient administration. Figure 6 illustrates the concentration and distribution of the priority harbors within Casco Bay. The designation of Casco Bay as an NDA will provide an additional means of protection for the myriad of sensitive natural resources from a diffuse, difficult-to-detect form of pollution.

## **PUMPOUT FACILITIES**

### **Background**

Since 1993, Maine has worked toward increasing the availability of boat pump-out stations along the coast and increasing the public's awareness of the facilities through the Federal Clean Vessel Act funding. Until 1998, the grants were administered by the State Planning Office (SPO). Starting in 1999, the grant program has been administered by the DEP.

The DEP has been successful in a number of ways but there is plenty of work yet to be done due to rapidly increasing recreational boat traffic along the coast. The state has tripled the number of pump-outs available on the coast and, through education and outreach materials, has increased the level of pump-out use throughout the coast.

In 2000, DEP compiled an inventory and ranked all the roughly 350 navigable harbors in the state according to the number of boats normally sheltered, the harbor flushing capability, the presence of sensitive habitats, and the presence or absence of other known sources of pollution. After ranking, the DEP identified the top 100 as "significant" or "priority" harbors. After reviewing the pumpout priority list and discussing the feasibility of pumpout installation in some more remote areas of the coastline, *the DEP has concluded that the pumpout station goal should be to have pumpout within 4 miles of all the priority harbors.* Achieving this goal would ensure that a pumpout station is within one hour of all the significant harbors in the State.

As a tool for pumpout station installation, DEP has 38 M.R.S.A. §423-B. This section of law requires coastal marinas over a certain size to have operational pumpouts. All coastal marinas having a total of 18 or more slips and/or moorings for boats greater than 24 feet in length meet the threshold for pumpout requirement. All facilities that have installed a pumpout system and are subject to §423-B are also required to maintain their system in good working order. Facilities with pumpouts that are not subject to the requirements of §423-B but have received grant funds for their pumpout system are required to maintain their systems or refund a portion of the grant money they received. Since 2001, the DEP has conducted regular annual inspections of all pumpout systems to ensure that they function properly.

### **A. Location**

The 20 pumpout stations in Casco Bay are located at the major marinas and boatyards. The pumpout stations are concentrated at the southern end of the bay with the large marinas. Moving

east, the marinas get smaller and farther apart. Figure 7 details the location of all the pumpout stations. The type of pumpout varies as does the type of wastewater disposal. Many of the pumpout systems can discharge directly into the sewer.

The Friends of Casco Bay pumpout boat has been focusing on serving transients not staying at one of the major marinas, and so has been servicing some of the more remote locations in the bay. Last year, the Friends of Casco Bay pumpout boat conducted 471 pumpouts, previous years have ranged between 400 and 1,100 pumpouts. The significant variability was caused by weather and equipment malfunctions. A complete list of all Casco Bay pumpout facilities is in Table 1.

## **B. Accessibility**

Operating hours, contact information, pumpout system type , boat height and depth limitations are noted in Table 2. For the most part, pumpout facilities in Casco Bay are accessible and functional at high and low tides and have little to impede tall vessels. Some very deep or tall vessels are limited as to the number of fixed pumpout stations accessible, but the presence of a pumpout boat alleviates this limitation for these vessels.

Most large commercial passenger vessels are able to be accommodated at the State Pier, and plans are already in place for large capacity sewer connections should the need arise. Most large commercial passenger vessels have adequate holding capacity and so do not need pumpout facility while in port.

Table 1.. Pumpout Station Locations

Town	Waterbody	Company	Latitude and Longitude	Pumpout Type	Shoreside Facilities
Brunswick	New Meadows River	New Meadows Marina	43 54' 37.83" N 69 52' 12.47" W	30 gal Caddy discharged to sewer	Full Restrooms
Brunswick	Merepoint Bay	Paul's Marina	43 49' 57.29" N 70 00' 35.17" W	Remote float moored in harbor equipped with 300 gal tight holding tank with manual pump. Towed into shore weekly to be pumped by septic service	Porta Potties
Falmouth	Casco Bay	Falmouth Public Landing	43 43' 48.81" N 70 12' 25.72" W	Stationary peristaltic into sewer	Restrooms
Falmouth	Casco Bay	Handy Boat	43 43' 14.29"N 70 12' 30.17" W	Trailer mounted diaphragm with 200 gal tank emptied by septic service	Restrooms
Freeport	Casco Bay	Brewers South Freeport Marine	43 49' 16.29" N 70 06' 16.18" W	Vacuum system into sewer	Porta Potties
Freeport	Casco Bay	Strouts Point Wharf	43 50' 20.41"N 70 05' 54.61" W	30 gal caddy discharged to sewer	Restrooms
Harpswell	Potts Harbor	Dolphin Marine Services	43 44' 50.68" N 70 02' 01.27" W	30 gal caddy pumped by septic service	Restrooms
Harpswell	Orrs Harbor	Great Island Marina	43 49' 57.48 N 69 54' 57.58" W	trailer mounted peristaltic with 200 gal tank pumped by septic service	Restrooms

Phippsburg	Sebasco Harbor	Sebasco Harbor Resort	43 45' 54.66" N 69 51' 51.50" W	Edson peristaltic installed with 1000 gal holding tank pumped by septic service	Restrooms
Portland	Diamond Cove	Diamond Cove Marina	43 41' 02.16" N 70 11' 27.25" W	EMP dockmate II caddy into sewer	None
Portland	Portland Harbor	DiMillos Old Port Marina	43 39' 22.05" N 70 14' 55.01" W	stationary EMP connected to sewer	Full restroom with showers
Portland	Portland Harbor	Maine Yacht Center	43 40' 38.33" N 70 15' 07.33" W	Stationary connected to sewer	Full restroom with showers
Portland	Portland Harbor	Portland Yacht Services	43 39' 48.96" N 70 14' 29.68" W	EMP peristaltic stationary connected to sewer	Restrooms
South Portland	Casco Bay	Friends Of Casco Bay	Mobile	Pumpout Boat with 300 gal tank emptied via shoreside pumpout station	N/A
South Portland	Portland Harbor	South Port Marine	43 38' 44.61" N 70 14' 51.46" W	Stationary with to 1000 gal holding tank pumped by septic service	Restrooms
South Portland	Portland Harbor	Spring Point Marina	43 38' 58.62" N 70 13' 51.71" W	Porta-pottie wash down connected to sewer	Restrooms
South Portland	Portland Harbor	Sunset Marina	43 38' 55.79" N 70 14' 39.71" W	Peristaltic connected to sewer	Restrooms
South Portland	Portland Harbor	Aspasia Marina	43 38' 55.79" N 70 14' 37.03" W	Stationary peristaltic connected to sewer	Restrooms

Yarmouth	Royal River	Yankee Marina	43 47' 43.29" N 70 10' 19.18" W	Stationary connected to sewer	Restrooms
Yarmouth	Royal River	Yarmouth Boat Yard	43 47' 50.29" N 70 10' 36.18" W	30 gal caddy emptied by septic service	Restrooms

Table 2. Pumpout Station Accessibility

Town	Waterbody	Company	VHF Hailing Frequency	Phone	Operating Hours	Pumpout Location	Height Limits	Min Depth
Brunswick	New Meadows River	New Meadows Marina	Channel 9	443-6277	June-Sept 8-5 M-F Weekend by appt.	Caddy available on all docks	none	4'
Brunswick	Merepoint Bay	Paul's Marina	Channel 9	729-3067	June-Sept Self Serve 24/7	remote float and 300 gal holding tank with manual self serve pump	none	10'
Falmouth	Casco Bay	Falmouth Public Landing	Channel 9	781-7317	June-Sept Self Serve 24/7	Installed stanchion on end of float	none	10'
Falmouth	Casco Bay	Handy Boat	Channel 9	781-5110	June-Sept 8-8 7 days	Trailer mounted available on gas dock or travel lift pier	none	4'
Freeport	Casco Bay	Brewers South Freeport Marine	Channel 9	865-3181	June-Sept 8-8 7 days	Vacuum system available at gas dock	none	10'
Freeport	Casco Bay	Strouts Point Wharf	Channel 9	865-3899	June-Sept 8-8 7 days	30 gal caddy avail on all docks	none	10'
Harpwell	Potts Harbor	Dolphin Marine Services	Channel 9	833-6000	June-Sept 8-8 7 days	Caddy available on dock	none	10'
Harpwell	Orrs Harbor	Great Island Boatyard	Channel 9	729-1639	June-Sept 8-8 7 days	trailer mounted available on Maine dock	none	10'

Phippsburg	Sebasco Harbor	Sebasco Harbor Resort	Channel 9	389-1161	June-Sept 8-8 7 days	Installed stanchion on the pier	none	6'
Portland	Diamond Cove	Diamond Cove Marina	Channel 9	766-5850	June-Sept 8-8 7 days	Caddy available on the float	none	6'
Portland	Portland Harbor	DiMillos Old Port Marina	Channel 9	773-7632	May-October 8-8 7 days	Stationary on the fuel dock	none	10'
Portland	Portland Harbor	Maine Yacht Center	Channel 9	842-9000	June-Sept 8-8 7 days	Stationary available at slips and dock face	none	10'
Portland	Portland Harbor	Portland Yacht Services	Channel 9	774-1067	June-Sept 8-8 7 days	Stationary available on main dock	none	10'
South Portland	Fore River	City of South Portland	Channel 9	767-3201	June-Sept 8-8 7 days	Stationary available on dock face	none	6'
South Portland	Casco Bay	Friends Of Casco Bay	Channel 9	776-0136	June-Sept By apt.	Pumpout Boat with 300 gal tank	none	10'
South Portland	Portland Harbor	South Port Marine	Channel 9	799-8191	June-Sept 8-8 7 days	Stationary available on the gas dock	none	4'
South Portland	Portland Harbor	Spring Point Marina	Channel 9	767-3213	June-Sept 8-8 7 days	Porta-pottie wash down located next to the dockmasters building	none	10'

South Portland	Portland Harbor	Sunset Marina	Channel 9	767-4729	June-Sept 8-8 7 days	Stationary available on transient dock	none	6'
South Portland	Portland Harbor	Aspasia Marina.	Channel 9	767-3010	June-Sept 8-8 7 days	Stationary available on main finger float	none	10'
Yarmouth	Royal River	Yankee Marina	Channel 9	846-4326	June-Sept 8-8 7 days	Stationary available on dock at north end of slips	none	6'

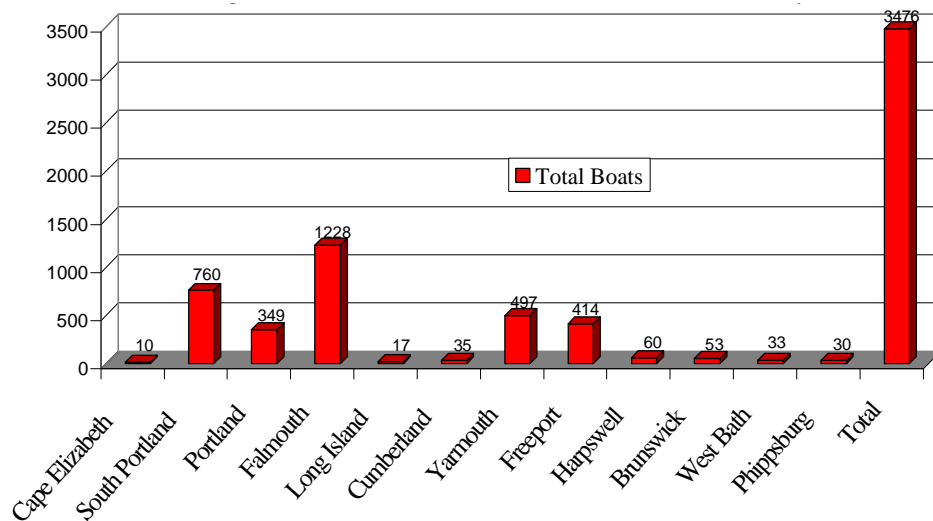
## C. Vessel population and usage

### Recreational Vessels

Casco Bay is home to Maine's largest concentration of recreational and commercial vessels. Roughly 2000 mostly recreational vessels reside in one of the 19 large commercial marinas. Over 1000 utilize some large and well managed municipal mooring fields. Although very difficult to quantify, the DEP estimates that the coast is visited by over 8,000 transient boaters a year, an unknown fraction of these will be visiting Casco Bay at any one time. The significant majority of these boats are cruising vessels normally over 30' in length.

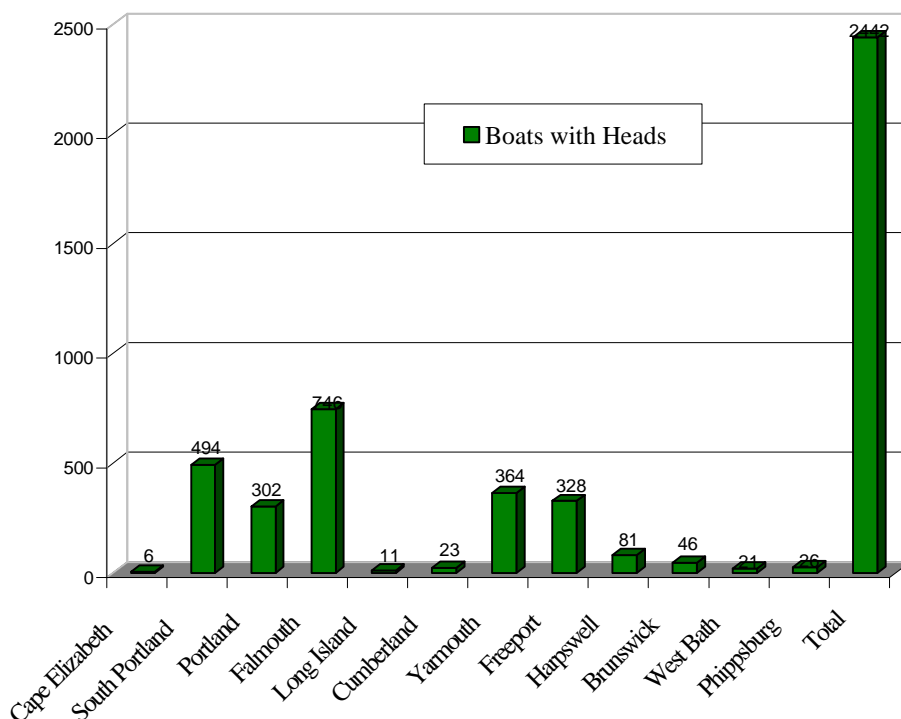
Data used in this application came from marinas (2004 data), harbormasters (2004 data), and state registration data (2003 data). Aerial photos were used to verify the data but due to variability in over-flight timing may not reflect the boat density accurately. Maine DEP is fortunate in that many municipalities now collect information regarding boat length as part of the annual mooring application and survey. Some towns are even beginning to collect information from boat owners on MSD type (Freeport provided this information). This level of specificity can only help determine accurate pumpout to boat with heads ratios needed going into the future. The marinas provided gross numbers but were not willing or responsive to requests for more specificity. Some municipalities were not responsive to requests for mooring data and so the aerial photo data was the most accurate. Figure 8 details the total recreational boats by town based on the available data.

Figure 8. Total Resident Recreational Vessels in Casco Bay



In order to determine the number of boats with installed heads in Casco Bay that might actually need to use the pumpout station, ME DEP analyzed the data for broad assumptions. In general, boats larger than 24 feet long have some kind of a head on board, either a porta-pottie or an installed head. Based on the municipal mooring field data, between 55% and 75% of boats residing in Casco Bay marinas or mooring fields are longer 24 feet. Maine DEP will use an average of 65% for the purposes of determining the approximate number of vessels over 24' from the pool of "unknown length" data. Figure 9 reflects the actual and calculated (based on assumption above) number of recreational vessels with heads.

Figure 9. Total Resident Recreational Vessels with heads in Casco Bay



Tables 3 presents the recreational vessel data in more detail. The "unknown" column has already been adjusted to reflect only those vessels over 24' (total number multiplied by .65). USEPA has developed rough percentages that can help determine the number of vessels in various size ranges that actually may currently have holding tanks, as opposed to Type I or II MSDs. In order to be compliant with the proposed NDA, the remaining vessels, those with Type I or II MSDs will have to be retrofitted with holding tanks. Maine DEP is providing this information in order to estimate the impact on the current recreation resident vessels in Casco Bay.

Table 3. Resident Recreational Vessel Number with Heads and Estimated Type III MSDs.

<b>Boat Length</b>	<b>Unknown (but assumed over 24')</b>	<b>Under 24 Feet</b>	<b>24-40 Feet</b>	<b>&gt; 40 Feet</b>
Moored	408	825	852	97
Docked	1082			
<b>Total boats with heads</b>	<b>1490</b>		<b>852</b>	<b>97</b>
<b>Estimated Boats with Type III MSDs</b>	<b>745</b> EPA assumes 50% over 24 have Type III, balance have unknown	<b>165<sup>2</sup></b> EPA assumes 20% have Type III or porta pottie, balance have no head	<b>426</b> EPA assume 50% have Type III, balance have other MSD	<b>87</b> EPA assume 90% have Type III, balance have other MSD
<b>Estimated Boats that will have to retrofit</b>	<b>745</b>		<b>426</b>	<b>10</b>

Based on the mooring and marina information, ME DEP has determined that there are roughly 2440 recreational boats in Casco Bay over 24' with a high likelihood of having some kind of sanitary waste management system on board. More specifically based on USEPA's assumptions, there are likely over 1400 recreation vessels that currently have holding tanks but an additional 1181 will have to be retrofitted with a holding tank. In addition to the resident boats, Maine DEP estimates that over 8,000 transient vessels visit the Maine coast every year. Unfortunately, without a broad and intensive survey, there is no way to quantify the number of transients in Casco Bay at any particular time. Therefore, for a recreational vessel baseline of "boats with heads", including resident and transient vessels, the ME DEP will use the number of 3000. Using this baseline, the ratio of recreational vessels to pumpout stations in Casco Bay is 150:1, well within USEPA's guidelines of a minimum 300:1 ratio for adequate pumpout coverage.

### Commercial Vessels

Resident commercial vessel traffic in Casco Bay consists of fishing vessels, ferries, excursion boats and harbor service boats (tugs, barges, emergency vessels). According to the Department of Marine Resources, there are 652 commercial fishing vessels home ported in Casco Bay. The vessels range in size from 20' to over 90'. Of the fishing vessels, 90% (587) are lobster boats normally less than 45', the balance are urchin and scallop draggers and fin fishing boats (65) most of which are over 40'. There are two commercial ferry services in Casco Bay operating 8 vessels, and 18 other excursion and sightseeing companies operating over 30 vessels. ME DEP is assuming that all of the vessels are longer than 30'.

<sup>2</sup> ME DEP does not concur with USEPA's assumption that 20% of the vessels under 24' have installed heads or port-potties. We include this value for information purposes but we are not including this value in our calculation of boats with heads.

All ferries and most excursion boats have heads on board and either have Type II or Type III MSDs. Casco Bay Lines' ferry service are all equipped with Type III MSDs and are pumped out at their own facility on the Portland waterfront. There are a few vessels home ported in Portland that have live-aboard crew. These vessels either have access to a public sewer connection or have shore side facilities for the crew. Of the fishing vessels in Casco Bay, the larger vessels are normally equipped with heads. Accurate data on MSD installation and use for these vessels is not readily available. According anecdotal data from the Maine Lobsterman's Association, less than 10% of all lobster boats are equipped with installed heads or porta-potties.

According to 2004 data from the Port of Portland, roughly 730 transient commercial vessels visit Casco Bay during a given year including oil tankers, cargo vessels, fishing vessels and commercial passenger vessels (cruise ships and ocean liners). All commercial vessels berthing at the Port of Portland are required not to discharge even treated blackwater as part of the Port Tariff. Further, a number of other commercial piers have specific requirements prohibiting discharge of treated blackwater. There are commercial sewer hookups available at the State pier.

Portland is visited roughly 45 times per year by cruise ships and ocean liners also known as large commercial passenger vessel (LCPV)s. Large commercial passenger vessels docking at Port facilities are prohibited from discharging treated blackwater, similar to any other commercial vessel. The Port has direct sewage connections existing at a number of the piers and plans for new Port facilitations include sewer connections. Vessels that are anchored in the harbor are not presently prohibited from discharge but, starting in 2006 regardless of the no discharge area, will have to be licensed for any discharge of graywater or combined blackwater/graywater discharges and will be required to meet stringent discharge standards. Based on existing data, only those vessels with "advances" treatment systems will be able to meet the State's stringent licensing standards and thus be able to be permitted for discharge in State waters. Vessels unable to meet the discharge standards will be required to hold their wastewater within State waters. Currently, members of the International Coalition of Cruise Lines (ICCL) voluntarily hold all wastewater within 4 miles of the coast unless they have an advanced wastewater Treatment system (AWT).

Table 4. Commercial Vessels

<b>Boat Length</b>	<b>Unknown (but assumed over 24')</b>	<b>Under 24 Feet</b>	<b>24-40 Feet</b>	<b>&gt; 40 Feet</b>
Commercial Resident	587			103
Commercial transient				730
Commercial with heads	59			838

ME DEP has concluded that the majority of the commercial vessels, other than fishing boats, have a high likelihood of being equipped with heads due to their size and function. Also, it is important to note that the number presented for transient commercial vessels is the TOTAL number per year rather than how many there are on any particular day. The presence of heads on fishing boats is variable, but for the purposes of this application ME DEP is assuming all non-lobstering commercial fishing boats are equipped with heads but that only 10% of the lobster boats are quipped with heads.

Table 5 details the total number of recreational and commercial vessels with heads. Although a number of commercial vessels are not appropriate or feasible customers for the majority of pumpout stations, they are certainly affected by the proposed NDA and so anre included in this analysis. Further, all of the commercial transient vessels are included in this table even though only a fraction of them are in the Bay at any time. Therefore, the total number of **3897** boats with heads is over stated in Table 5. However, even including the overestimate on the commercial vessel traffic, the ration of the total number of boats with heads in Casco Bay to the existing pumpouts (20) is 196:1, still well within EPA's guidelines. Further, at least one new pumpout station is being installed within the next 6 months that will further improve the ratio.

Table 5. Total Vessels with Heads

<b>Boat Length</b>	<b>Unknown (but assumed over 24')</b>	<b>Under 24 Feet</b>	<b>24-40 Feet</b>	<b>&gt; 40 Feet</b>
Recreational Resident	1490	See footnote page 18	852	97
Recreational Transient (gross estimate)			100	461
Commercial Resident	59			103
Commercial transient				730
<b>Total</b>	<b>1549</b>		<b>952</b>	<b>1391</b>

Based on these calculations, the ME DEP concludes there are adequate pumpout stations to service the vessels of Casco Bay. If any areas (like commercial fishing) appear to be underserved, ME DEP will work with the community to improve pumpout capability.

## **PUBLIC EDUCATION AND ENFORCEMENT**

Education and enforcement plays an important role in the successful implementation of an NDA. The prohibition on discharging boat sewage in an NDA applies to all vessels, commercial and recreational, regardless of the Type of MSD on board. Information on and enforcement of federal laws related to MSDs is the responsibility of the US Coast Guard. States also have the authority to enforce the prohibition of vessel sewage discharges in NDAs, pursuant to 33 USC 26 Section 1322(k). In the State of Maine the Maine Marine Patrol, part of the Department of Marine Resources, the Maine Wardens Service, part of the Department of Conservation, the State Police and some harbor masters have enforcement authority for watercraft.

ME DEP produces a pumpout brochure annually that identifies all the pumpout locations along the coast. These pamphlets are distributed to all facilities with pumpout stations along with other boatyards and marinas. In addition, the Friends of Casco Bay produces pumpout service brochures and other educational materials that are handed out via the pumpout boat.

ME DEP will work with municipalities to provide and install adequate signage informing boaters of the NDA and will provide template language to help marinas and boatyards communicate the requirements to their customers. Further, the ME DEP plans to produce a public service announcement on the NDA for distribution in the Casco Bay area. Cruising guides, local newspapers and boating magazines will all be informed of the changes with press releases.

ME DEP will specifically discuss sewage disposal and pumpout needs with the commercial vessel community to ensure their needs are met and that they fully understand the requirement so of the law.

After the first year of the NDA, ME DEP plans to conduct an informal survey during the following boating season to determine the level of awareness among the boating public. Based on the results of the survey, Maine DEP will either perform additional outreach efforts targeted at the populations that seem to be less informed or will proceed with a small targeted enforcement project in cooperation with the local harbor master, the Marine Patrol and the Coast Guard. The purpose of the targeted enforcement project will be to 1) determine compliance trends and 2) get the word out that the NDA will be enforced 3) refine enforcement tools and methods. The enforcement team will try a variety of methods including boarding and inspection (particularly for resident boats in slips), and dying heads and holding tanks. The results of the enforcement project will be publicized with a press release and further public education efforts. Based on the indication of overall compliance revealed in the project the DEP will create an overall enforcement strategy that is reasonable and implementable on the local level.

# **APPENDIX A**

## **Oversized Figures**

# **APPENDIX B**

## **Sample Educational Materials and Inspection Form**

## **APPENDIX C**

### **Pumpout Facility Photos**

**Paul's Marina, Brunswick**

**No Picture**

**New Meadows Marina, Brunswick**

**No Picture**



**Falmouth Town Landing Stantion**



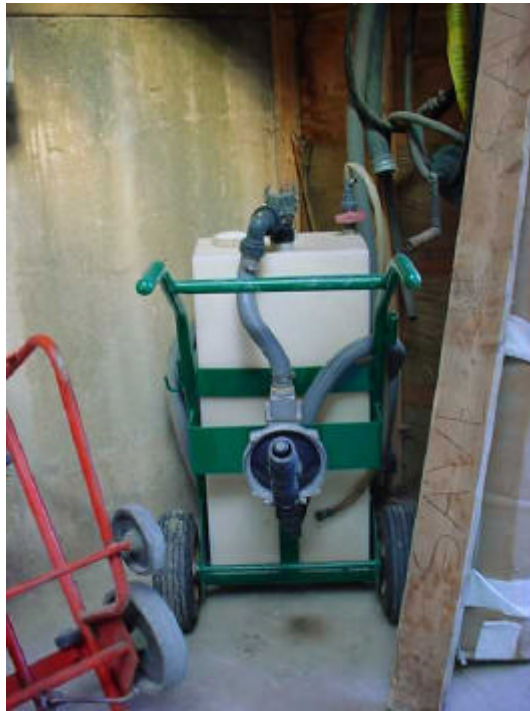
**Falmouth Town Landing Pump**



**Handy Boat, Falmouth**



**Brewers South Freeport Marina, Freeport**



**Strout's Point, Freeport**



**Dolphin Marina, Harpswell**



**Great Island Marina, Harpswell**

**Sebasco Harbor Resort, Phippsburg**

**No Picture**

**Diamond Cove Marina, Great Diamond Island, Portland**

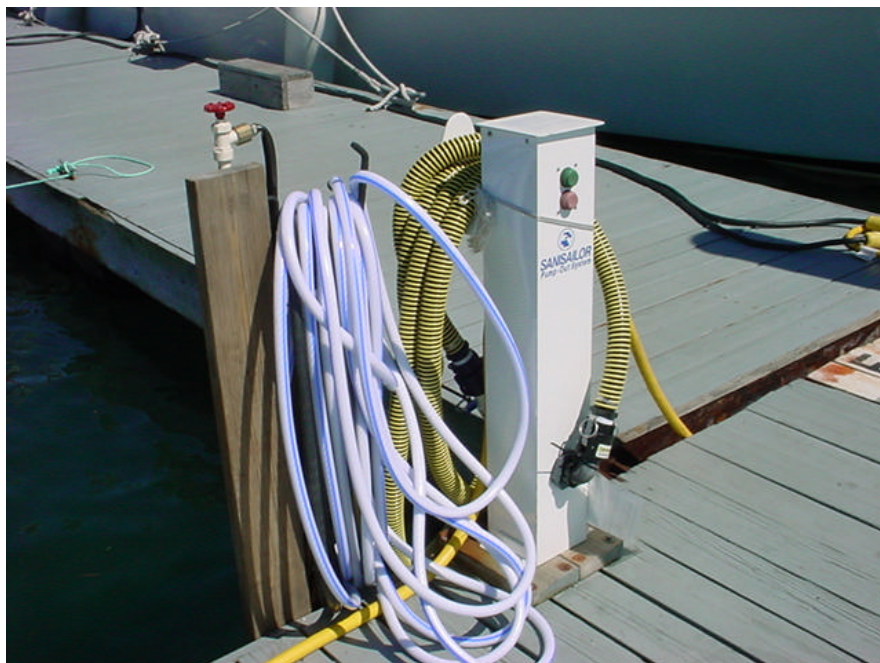
**No Picture**



**DiMillo's Marina, Portland**



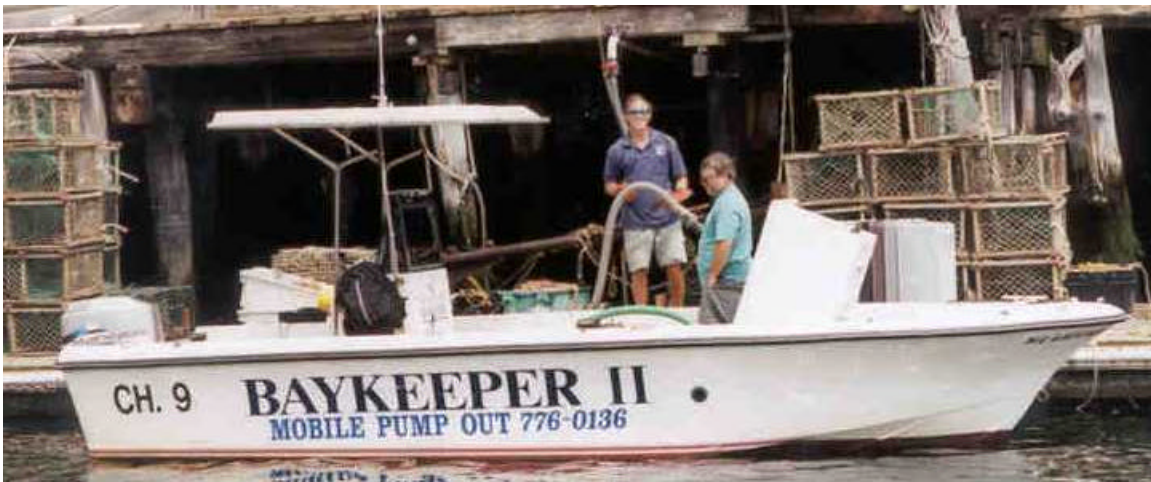
**Maine Yacht Center, Portland**



**Portland Yacht Services, Portland**



**Portland Yacht Services, Portland**



**Friends of Casco Bay, South Portland**



**South Port Marina, South Portland**



**South Port Marina, South Portland**



**Spring Point Marina, South Portland**



**Sunset Marina, South Portland**



**Aspasia Marina, South Portland**



**Yankee Marina, Yarmouth**